



COMMONWEALTH of VIRGINIA

Department of General Services

**Division of Purchases and Supply
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CONTRACT MODIFICATION

Date: September 9, 2010

Contract No.: E194-20340-07

Modification No.: 001

Issued By: Department of General Services
Division of Purchases and Supply
1111 East Broad Street
Richmond, Virginia 23218

Contractor: Motor Coach Industries, Inc.
1700 East Golf Road, Suite 300
Schaumburg, IL 60173

This Supplemental Agreement is entered into pursuant to the provision of the basic contract. Description of Modification:

1. The Contract will be renewed for one (1) year starting September 15, 2010 through September 14, 2011.
2. The Contract Number is changed to read E194-490.
3. The contract pricing is hereby increased by 5.791% based on the PPI adjustment per the PCU3361202 Truck & Bus Chassis as indicated in the terms and conditions of the original contract. Pricing schedule is hereby incorporated into the agreement as described in Attachment "A" of this modification agreement.

4. Under Section I – Technical Specifications for the Commuter Coach 2010 Engine Technology for the ACTIA Electrical System 3.6.4 is hereby incorporated in the agreement as described in Attachment “B” of this modification agreement.
5. In addition, the 2010 cooling module, condenser and evaporator fins, Bitzer compressor, Mitsubishi starter, new coach engine doors and lighting, fuel tank, new commercial wheelchair lift specification can be requested by the sale representative.

All other provisions of the Agreement not affected by this Amendment shall remain in full force and effect.

CONTRACTOR:

By: 

Title: VP Public Sector

PURCHASING AGENT:

By: _____

Title: _____

ATTACHMENT A

PRICING SCHEDULE:

2010 Engine Technology

1-10	11-20	21-30	31-100
\$515,267.00	\$504,961.00	\$499,912.00	494,913.00

2009 Engine Technology (while technology remains available)

1-10	11-20	21-30	31-100
\$497,015.00	\$487,075.00	\$482,204.00	\$477,382.00

PRICING FOR OPTIONS ITEMS:

OPTIONS:	PRICE AMOUNT:	
Surveillance System	\$13,752.83	
Global Positioning System (GPS) Antenna	\$317.37	
CT Version (CT= frameless sash disc brakes & updated lower from facia)	\$5,289.55	
Caterpillar C13 12.5 Liter 410 HP with Engine Brake	No Charge	Included in Bid Price
S4.5.1.2106 Alcoa Durabrite Aluminum Wheels	\$1,809.03	Included in Bid Price
Twin Vision LED Color Destination Sign	\$19,852.74	
Luminator LED Color Destination Sign	\$19,529.02	
LED Route/Block box connected to Destination Sign	\$835.75	Included in Bid Price
S31.1.309.2 Two Rounded LED Red Stop Lights at rear	\$285.64	Included in Bid Price
Wiring for Farebox and Radio with Antenna	\$216.87	
S4.1.161.2 EX225 Disc Brakes on all axles	No Charge	
S4.7.376 Gladhands at front for towing	\$909.80	
Air Horn with foot control	No Charge	
1.14.2 Keyed alike locks	No Charge	
3.1.28 Six (6) interior LED aisle light (Blue)	\$391.43	Included in Bid Price
3.1 LED Reading Lights	\$2,189.87	Included in Bid Price
Auxiliary Heater - A Proheat X45 45,000 BTU	\$2,517.83	
Chemical type Lavatory	\$2,269.22	

ATTACHMENT B

3.6.4 ELECTRICAL SYSTEM

3.6.4.1 GENERAL REQUIREMENTS

The basic coach electrical control and wiring system shall be Actia Multiplex System or approved equal. Versatility and future expansion of the system shall be provided for by expandable system architecture. The system shall be CAN (Controller Area Network) 2.0B/SAE J1939 compatible. On each Actia's Power Management Module (PMM), the data channels can provide gateway between data segments. The CAN channels can also route messages from one network segment to another. The system components shall be capable of reliable operation in an environment of between minus 30C to plus 80C while encountering mobile shock and vibration. Each module shall be adequately shielded to prevent interference by EMI and RFI. Each PMM is programmed identically. Their individual responsibility on the vehicle is assigned through the harness by looping back the "address pin" to one of eight input pins. The "address pin" has a unique electrical signature that cannot be confused with any other input. So, at vehicle start-up each PMM discovers its location on the vehicle by recognizing which input pin is connected to the "address pin". When an input pin is used for addressing, it's no longer available for use as a vehicle input. The multiplex power source is isolated thereby avoiding any ground noise.

A LCD diagnostic display module will be installed inside the Front Junction Box below the driver's window. This LCD display module utilizes the CAN bus to monitor each PMM's inputs and outputs status in real time, report the PMM diagnostic fault codes as well as the communication errors. The components of the multiplex system shall be of modular design thereby providing for ease of replacement by field maintenance personnel. Each PMM shall be capable of providing combination of high side, low side and Pulse-width modulation (PWM) circuits. The internal controls device shall be a solid state device, providing an extended life service cycle. Protection to each individual circuit shall be provided be either non-self-resetting circuit breakers or fuses. Programmable time delay functions and integrated flasher capabilities shall be contained in the control module.

The electrical system shall provide and distribute power to ensure satisfactory performance of all electrical components. The system shall supply a nominal 24 volts of direct current. Precautions shall be taken to minimize hazards to service personnel. Transient voltages above 220 volts may be used in fluorescent lighting systems.

The power generating system shall be rated to provide sufficient power. A Delco 50 DN 24 volt, 270 amp alternator, or approved equal shall be provided with the basic commuter coach package. All circuits except for the starter and alternator power cables shall be protected by circuit breakers, fuses or solid state devices. One ground may be the bus body and framing and shall be attached to ground studs. Grounds shall not be carried through hinges, bolted joints (except those specifically designed as electrical connectors), or power plant mountings. Wiring and electrical equipment necessarily located under the coach shall be insulated from water, heat, corrosion, and mechanical damage.

3.6.4.2 MODULAR DESIGN

Design of the electrical system shall be modular so that each major component, apparatus panel, or wiring bundle is easily separable with standard hand tools or by means of connectors. Each module, except the main body wiring harness, shall be removable and replaceable in less than 30 minutes by a mechanic. Power plant wiring shall be an independent wiring module. Replacement of the engine compartment wiring module(s) shall not require pulling wires through any bulkhead or removing any terminals from the wires.

3.6.4.3 JUNCTION BOXES

All relays, controller, flashers, and other electrical components shall be mounted in easily accessible junction boxes. The boxes shall be sealed to prevent moisture from normal sources, including engine compartment cleaning, from reaching the electrical components and shall prevent fire that may occur inside the box from propagating outside the box. If the rear junction boxes are required, they shall be located away from the surge tank or properly protected from coolant overflows. The components and circuits in each box shall be identified and their locations recorded on a schematic drawing permanently glued to or printed on the inside of the box cover or door. The drawing shall be protected from oil, grease, fuel, and abrasion. A rear start and run control box shall be mounted in an accessible location in the engine compartment. No electrical controls shall be located where spillover from the surge tank can wash over the electrical controls or enter junction boxes.

Care shall be taken to route electrical harnesses from junction boxes to facilitate troubleshooting and to reduce defects. Terminal strips not blocks shall be used to make connections. Wiring under the coach floor in the baggage area shall be routed in an enclosed trough.

3.6.4.4 WIRING AND TERMINALS

All wiring between major electrical components and terminations, except battery wiring, shall have double electrical insulation, shall be waterproof, and shall meet specification requirements of SAE Recommended Practice J555 and J1128 Type SXL or GXL. All wiring harnesses manufactured for buses purchased under this contract shall be designed and manufactured for the operation of all sub components installed on the buses. Harnesses shall be properly designed and sized to the bus. Battery wiring shall conform to specification requirements of SAE Standard J1127-Type SGX or SGT and SAE Recommended Practice J541.

All wiring shall be properly grouped, numbered, and color-coded full length. Numbering shall be stamped at least every three (3.0) inches (76.2 mm). Installation shall permit ease of replacement. All wiring harnesses over 5-feet (1.50 meters) long and containing at least five (5) wires shall include at least 2 or 10 percent excess wires whichever is greater for spares, excluding the battery cables. In addition, twelve (12) spare wires distributed proportionally between the lightest and heaviest gauge used (excluding battery cables) shall be provided between the front and rear junction boxes. Wiring harnesses shall not contain wires of different voltages unless all wires within the harness are sized to carry the current and insulated for the highest voltage wire in the harness.

Double insulation shall be maintained as close to the terminals as practicable. The requirements for double insulation shall be met by wrapping harnesses with plastic

electrical tape or by sheathing all wires and harnesses with nonconductive, rigid or flexible conduit. Grommets of elastomeric materials shall be provided at points where wiring penetrates the metal structure. Wiring supports shall be nonconductive. Precautions shall be taken to avoid damage from heat, water, solvents, or chafing. Wiring length shall allow replacement of end terminals twice without pulling, stretching, or replacing the wire.

Battery cables and alternator/generator output cables shall utilize AMP terminal ends or approved equal. Except for those on large wires such as battery cables, terminals shall be crimped to the wiring. Terminals shall be full ring type or interlocking and corrosion-resistant. T splices may be used when it is less than 25,000 circular mills of copper in cross-section: a mechanical clamp is used in addition to solder on the splice; the wire supports no mechanical load in the area of the splice; and the wire is supported to prevent flexing.